

Serial No. 10/735,759
April 1, 2005
Reply to the Office Action dated January 11, 2005
Page 2 of 7

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A semiconductor device comprising:

a semiconductor substrate;

a field effect transistor provided on the semiconductor substrate and having electrodes, the field effect transistor having a gate recess and a Schottky junction for a gate electrode; and

a pn junction diode provided on the semiconductor substrate and having electrodes, the pn junction diode having an n-type layer and a p-type layer; and
at least one ion implanted region disposed between the field effect transistor and the pn junction diode; wherein

at least one of the electrodes of the field effect transistor and at least one of the electrodes of the pn junction diode are composed of metal conductors which are simultaneously formed.

Claim 2 (original): The semiconductor device according to Claim 1, wherein a source electrode and a drain electrode of the field effect transistor and a cathode of the pn junction diode are composed of metal conductors which are simultaneously formed.

Claim 3 (original): The semiconductor device according to Claim 1, wherein the gate electrode of the field effect transistor and an anode of the pn junction diode are composed of metal conductors which are simultaneously formed.

Claim 4 (original): The semiconductor device according to Claim 1, wherein at least one of active layers of the field effect transistor and at least one of active layers of

Serial No. 10/735,759

April 1, 2005

Reply to the Office Action dated January 11, 2005

Page 3 of 7

the diode are composed of layers which are obtained from a common active layer which is epitaxially grown.

Claim 5 (original): The semiconductor device according to Claim 4, wherein contact layers of the field effect transistor and of the n-type layer of the pn junction diode are composed of layers which are obtained from a common n-type layer provided on the semiconductor substrate which is epitaxially grown.

Claim 6 (original): The semiconductor device according to Claim 5, wherein the contact layers are provided on a channel layer on the semiconductor substrate of the field effect transistor, and the p-type layer of the pn junction diode is provided on the n-type layer thereof.

Claim 7 (original): The semiconductor device according to Claim 4, wherein the active layer of the field effect transistor is separated from the active layer of the diode.

Claim 8 (currently amended): A semiconductor device comprising:
a semiconductor substrate;
a field effect transistor provided on the semiconductor substrate and having electrodes, the transistor having a gate recess and a Schottky junction for a gate electrode; and
a pn junction diode provided on the semiconductor substrate and having electrodes, the pn junction diode having an n-type layer and a p-type layer; and
at least one ion implanted region disposed between the field effect transistor and the pn junction diode; wherein
a source electrode and a drain electrode of the field effect transistor and a cathode of the pn junction diode are composed of metal conductors which are simultaneously formed; and

Serial No. 10/735,759

April 1, 2005

Reply to the Office Action dated January 11, 2005

Page 4 of 7

the gate electrode of the field effect transistor and an anode of the pn junction diode are composed of metal conductors which are simultaneously formed.

Claim 9 (original): The semiconductor device according to Claim 8, wherein at least one of the electrodes of the field effect transistor and at least one of the electrodes of the pn junction diode are composed of metal conductors which are simultaneously formed.

Claim 10 (original): The semiconductor device according to Claim 8, wherein at least one of active layers of the field effect transistor and at least one of active layers of the diode are composed of layers which are obtained from a common active layer which is epitaxially grown.

Claim 11 (original): The semiconductor device according to Claim 10, wherein contact layers of the field effect transistor and of the n-type layer of the pn junction diode are composed of layers which are obtained from a common n-type layer provided on the semiconductor substrate which is epitaxially grown.

Claim 12 (original): The semiconductor device according to Claim 11, wherein the contact layers are provided on a channel layer on the semiconductor substrate of the field effect transistor, and the p-type layer of the pn junction diode is provided on the n-type layer thereof.

Claim 13 (original): The semiconductor device according to Claim 10, wherein the active layer of the field effect transistor is separated from the active layer of the diode.

Claims 14-16 (canceled).